Yuqun Wu

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Education

University of Illinois at Urbana-Champaign — Champaign, USA
Master of Science in Computer Science (thesis) — *Aug 2022 - May 2024*
- Advisor: *Prof.Derek Hoiem*, *Prof.Shenlong Wang*

Bachelor of Science in Computer Science & Statistics — *Jan 2020 - Dec 2021*
- Highest Honors at graduation, Dean's list for all years
- GPA: 4.0/4.0

Sun Yat-sen University — Guangzhou, China
Bachelor of Science in Mathematics — *Sep 2016 - Dec 2019*

Research Experience

University of Illinois at Urbana-Champaign — Champaign, USA
Research Assistant, Supervisor: Prof.Derek Hoiem, Prof.Shenlong Wang — *Mar 2020 - Present*

Sparse SPN: Depth Completion from Sparse Keypoints - *In Submission*
- Project draws attention to single view depth completion taking point cloud from SFM as input
- Design a novel method that outperforms existing depth completion pipelines given sparse keypoint depth, and reconstructs complete point clouds given real SfM setup

QFF: Quantized Fourier Features for Neural Field Representations - *In Submission*
- Project proposes Quantized Fourier Features (QFF), which encodes features in bins of Fourier features, and can result in smaller model size, faster training, and better quality outputs for various applications of neural representation
- Assist in blending QFF into different network setups and running experiments

Unified indoor 3D representation
- Project targets at building an indoor 3D scene with unified representation using NeRF based method
- Assist in investigating ideas of picking suitable representation, and preparing dataset

GRIT: General Robust Image Task Benchmark
- Rendered surface normal of object-centric and scene-centric datasets, and split them into training, validation, and testing sets
- Trained a baseline network with training sets, and compare it with several other pretrained state-of-the-art normal estimation networks with testing sets

Depth Completion With Sparse Depth Input
- Project aimed at improving the monocular depth completion by optimization based on sparse depth input, normal mapping, and occlusion boundary
- Implemented baseline, investigated differentiable optimization strategies, and ran expensive experiments

University of California San Diego — Remote
Research Assistant, Supervisor: Prof.Manmohan Chandraker — *Jun 2022 - Sep 2022*

Lighting completion from sparse lighting samples
- Project aims at recovering per-pixel spatially-varying lighting maps taking single color image and sparse lighting samples
- Investigate 2D lighting completion methods with differentiable rendering and compare to estimation networks

Activities

Teaching Assistant — Champaign, USA
University of Illinois at Urbana-Champaign — *Aug 2022 - Dec 2022*
- Course: *CS 445 Computational Photography*

Summer Research Experience for Undergraduates (REU) — Champaign, USA
University of Illinois at Urbana-Champaign — *May 2021 - Aug 2021*
- Attended weekly seminars covering research skills, presentation skills